



UNITED STATES NAVY

# MEDICAL NEWS LETTER

Vol. 39

Friday, 19 January 1962

No. 2

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United States Navy  
MEDICAL NEWS LETTER

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Vol. 39

Friday, 19 January 1962

No. 2

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Policy

The U. S. Navy Medical News Letter is basically an official Medical Department publication inviting the attention of officers of the Medical Department of the Regular Navy and Naval Reserve to timely up-to-date items of official and professional interest relative to medicine, dentistry, and allied sciences. The amount of information used is only that necessary to inform adequately officers of the Medical Department of the existence and source of such information. The items used are neither intended to be, nor are they, susceptible to use by any officer as a substitute for any item or article in its original form. All readers of the News Letter are urged to obtain the original of those items of particular interest to the individual.

\* \* \* \* \*

Change of Address

Please forward changes of address for the News Letter to: Commanding Officer, U. S. Naval Medical School, National Naval Medical Center, Bethesda 14, Md., giving full name, rank, corps, and old and new addresses.

\* \* \* \* \*

The issuance of this publication approved by the Secretary of the Navy on 28 June 1961.



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—Editor

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### CRYOBIOLOGY

Joseph F. Saunders PhD, Head, Medicine and Dentistry Branch, Office of Naval Research, NAVAL RESEARCH REVIEWS, November 1961.

(NOTE: Permission has been granted by the author and by the Editor of the Naval Research Reviews, Mr. A. T. Drury, to publish this article in unabridged form in the U. S. Navy Medical News Letter. The factual information and progress herein reported are of great potential importance to present and future biologic, medical, viral, bacteriologic, parasitologic, tissue cultural, tissue preservative, and other advances. This paper also represents a timely and logical supplement to the series of articles by Dr. William J. Mills Jr, MD and associates from ALASKA MEDICINE reported recently in the Medical News Letter.)

—Editor

Cryogenics\* has made tremendous strides in the past decade in application to such fields as missiles, electronics, and gas liquefaction. On the other hand, the latent possibilities of the new field of cryobiology† have hardly been touched. For the past few years, the U. S. Navy, foreseeing the tremendous application of cryobiologic research (in blood and tissue preservation‡ for treating traumatic injuries in peace and war, for example), has been fostering basic and applied research in this field.

Until recently, man's interests in biologic freezing appear to have been focused primarily on his defense against it (such as the prevention and treatment of frostbite). Very little attention has been given to the possible beneficial effects of cold—particularly as a practical tool in biologic research. As long as 300 years ago, the eminent chemist, Robert Boyle, published a series of essays on the effects of cold on knights in armor. He was also perhaps the first to show that frogs and fish remained viable even after being encased in ice for as long as two days. Since then, researchers have established the fundamental fact that many living plant and animal tissues can be exposed to the lowest available temperatures ( $-455^{\circ}\text{F}$ ) without being killed. Today, cryobiologic research is directed along two principal lines: studies of the uses of low temperatures for the preservation of individual cells, lower organisms, and tissues of higher animals; and studies of the effects of temperature reduction in warm-blooded animals, such as occurs during physiologic hibernation and

\* A branch of physics dealing with the generation of low temperatures (near absolute zero degrees or about  $-455^{\circ}\text{F}$ ) and their effects on various materials.

† A branch of physical biology dealing with the effects of low temperatures on living processes in biologic systems. It covers a wide range of temperatures ( $32^{\circ}\text{F}$  and below) and includes such things as immersion foot, hibernation, and other forms of "suspended animation."

‡ See June 1957 issue of Nav Res Rev for further details.

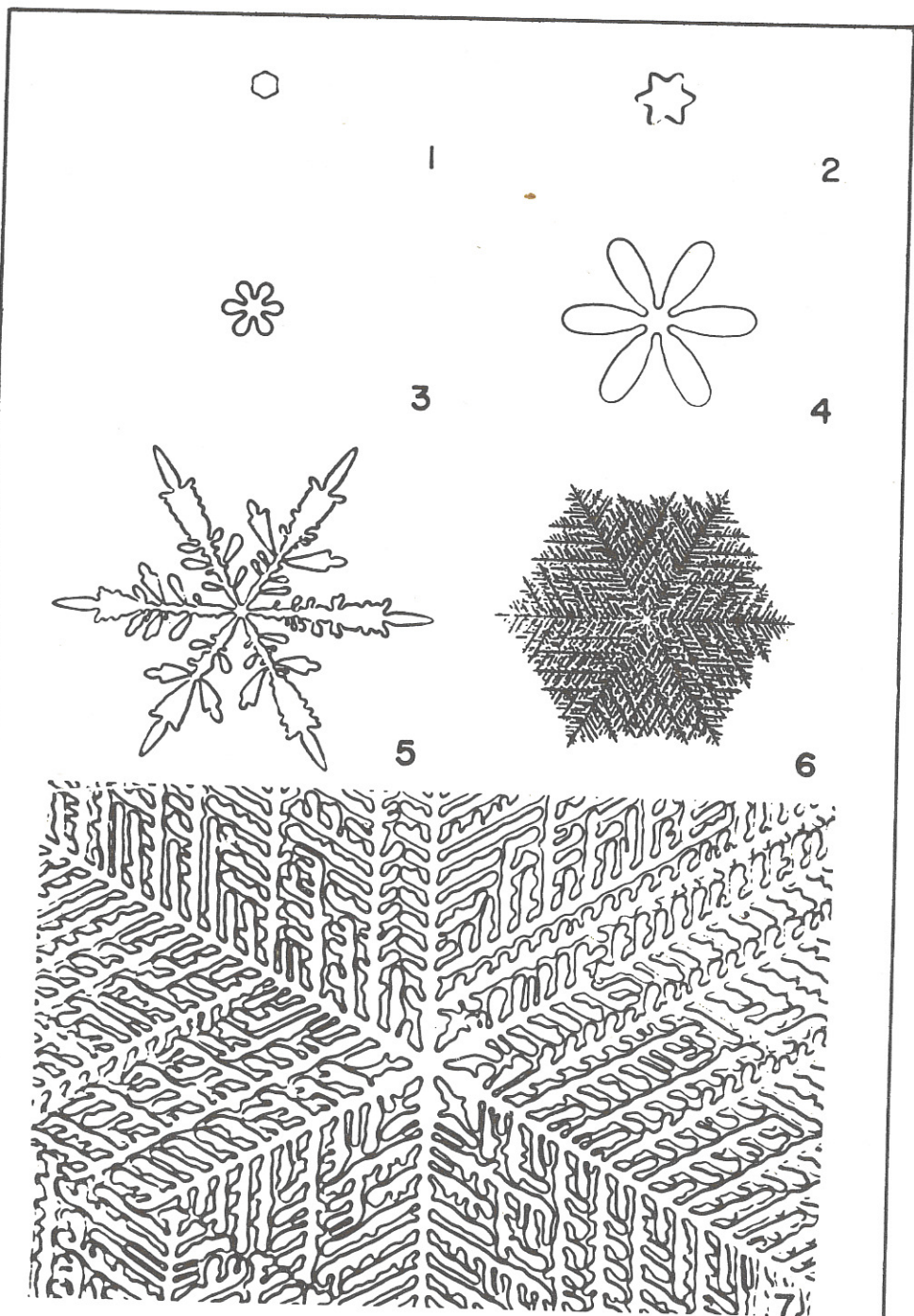


Figure 1 - Stages in the growth of a hexagonal ice crystal. 1: hexagonal disc; 2: star; 3 and 4: rosettes; 5: branching rosette; 6: skeleton; 7: enlargement of a portion of the skeleton shown in 6. (Courtesy of B. J. Luyet)



experimental hypothermia. (Hibernation is the normal physiologic response of certain species of animals when exposed to the seasonal lowering of their environmental temperatures. Hypothermia, on the other hand, is the induced lowering of the body temperature produced by a cold environment, such as the chilling of a patient's body prior to surgery.)

### The Mechanisms Involved

Although animals and plants, from the simplest microorganism to Homo sapiens, are extremely complex when viewed in their entirety, each basic entity (such as the single cell) may be likened to a simple machine. Cells as well as machines are energy-consuming units subject to the physical law of conservation of energy. The natural mechanism that functions to conserve energy during periods of cold is, of course, hibernation.

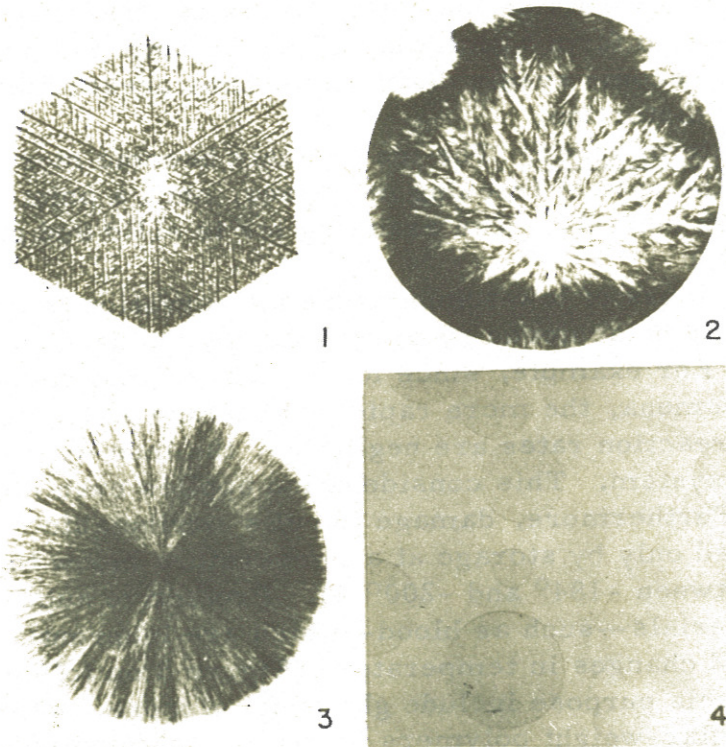


Figure 2 - The four basic types of ice crystal formations.  
1: hexagon; 2: irregular dendrite; 3: coarse spherulite;  
4: evanescent spherulite. (Photo courtesy of B. J. Luyet)

A serious deterrent to the advance of biologic research is the perennial problem of the long-term preservation of living cultures of cells, tissues, viruses, and bacteria. The answer to this dilemma may be a new freeze-thaw technique already useful in preserving human blood for long periods.



In surviving the freeze-thaw process, however, living organisms must undergo cooling, freezing, and existing for an indefinite period at subfreezing temperatures, as well as warming and thawing. The effects of freezing stem basically from two physical phenomena associated with the process: ice crystal formation (Figures 1 and 2) and its attendant dehydration. Variations in the end results depend on either or both of two factors: differences in the rate of freezing or thawing and variations in the physical characteristics of the material to be frozen.

The following describes briefly the effects of different rates of freezing on groups of living cells. (For further details, see February 1958 Nav Res Rev.)

#### Rate of Freezing

Slow. Few, large ice crystals form in the extracellular (interstitial) spaces. But when forming, these crystals withdraw pure water from both outside and inside the cells. Result: large crystals with dehydrated cells squeezed between.

Faster. More numerous, but smaller, ice crystals form. At first, all the crystals form outside the cells, but as the freezing rate is speeded up, the crystals also form within the cells. An optimum point is reached when the crystals become evenly distributed, thus preserving the cells with a minimum of distortion.

High Rate of Speed. The ice crystals become more numerous and smaller as the rate of freezing increases, until a point is reached when they finally vanish entirely. The resulting ice is solid and glassy. (This occurs near  $-200^{\circ}\text{F}.$ )

Maximum usefulness of low-temperature preservation in the biologic sciences and medicine can be achieved by preventing the occurrence of various detrimental reactions. For example, since ice crystal formation and growth are time-dependent phenomena, the more rapidly the temperature can be lowered to a point at which reaction rates are negligible, the less will be the risk of damage to the biologic system. This consideration applies even more to rewarming and thawing. Furthermore, damage to cells attributable to ice crystal growth can be prevented only by storage at a temperature below the recrystallization point of ice (between  $-184^{\circ}$  and  $-200^{\circ}\text{F}.$ ). Protective substances can be added to biologic materials—such as blood—which are inherently susceptible to damage due to rapid changes in temperature (Figure 3 on following page). Additives now in use for this purpose include glycerol, glucose, other sugars, and certain low-molecular-weight polymers (dextran, polyvinylpyrrolidone).

Today, many investigators believe that the death of cells from freezing results not from the freezing process, but rather from a slow warming and thawing process during which ice crystal growth (recrystallization) can proceed rapidly. When ice crystal formation is absent, most cells are not harmed by low temperatures.

#### Blood-Preservation Research

Ever since the technique of therapeutic blood transfusion was developed, early in the 20th century, scientists and physicians have been working toward a method





Figure 3 - Portion of a frozen red blood cell on the surface of a droplet of blood after direct freezing with liquid nitrogen. Magnified 17,400 times. (Photomicrograph courtesy of the Linde Co.)

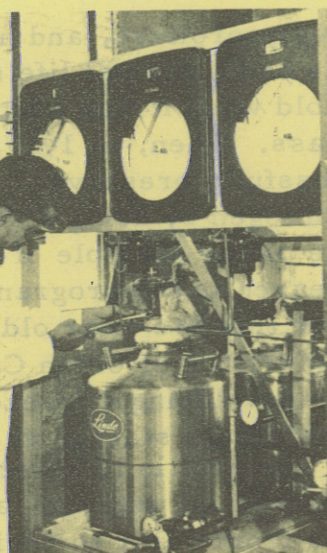


Figure 4 - Equipment for studying the effect of low temperatures on storage of blood, tissues, etc. (Photo courtesy of the Linde Co.)

of preserving blood for long periods. To justify the practicality of this effort, one merely needs to mention that blood valued at more than \$10,000,000 is wasted annually in the United States alone because the blood could not be used for transfusion within the currently prescribed storage period of 21 days. The demonstration in 1937 that cadaver blood could be used for transfusion, without the addition of anticoagulants, paved the way for stimulating interest in blood preservation. Blood banks were established in hospitals as early as 1937. With the widespread adoption of the blood-bank system, the study of the effects of various preserving methods on blood constituents gained new impetus. Numerous studies were made on the effects of various additives, anticoagulants, and varying temperatures.

The classical work of Luyet in 1949 paved the way for experimentation with the low-temperature preservation of blood. He showed that 70% of the red cells in smears of oxalated ox blood remained viable when cooled at a rate of some 200 degrees per second by immersion in liquid nitrogen and then rewarmed at about the same rate. In 1950, Dr. A. U. Smith (of the Institute for Medical Research in England) became interested in the protection of red blood cells during freezing and discovered that a 15% glycerol solution protected rabbit and human red blood cells from death during freezing at temperatures of  $-109^{\circ}\text{F}$  and  $-313^{\circ}\text{F}$ . With the foundation thus laid, considerable research followed. Pioneers, such as Sloviter, Mollison, Lovelock, and a host of others contributed to the development of a method whereby glycerolized blood could be frozen,



thawed, deglycerolized, and used for transfusion. It was shown that about 70% of the cells had a normal life span in the recipient. Later, this process got a firm foothold when it was adopted by the group at the Protein Foundation, Cambridge, Mass. Then, in 1955, Meryman (of the Naval Medical Research Institute) successfully preserved, thawed, and transfused blood that had been frozen in liquid nitrogen by using a "droplet" method.

The prime example of cryobiologic research sponsored by the Office of Naval Research is the program on the low-temperature preservation of blood. The work on this two-year old project is being done under contract by the Linde Company (Division of Union Carbide Corporation) of Tonawanda, N.Y. This company is developing a freeze-thaw method (Figure 4) of processing human blood for indefinite storage at liquid-nitrogen temperatures (on the order of  $-320^{\circ}\text{F}$ ). The goal is to achieve a simple, economical, speedy process of blood preservation, storage, and transfusion without any intermediate steps in the process from donor to recipient.

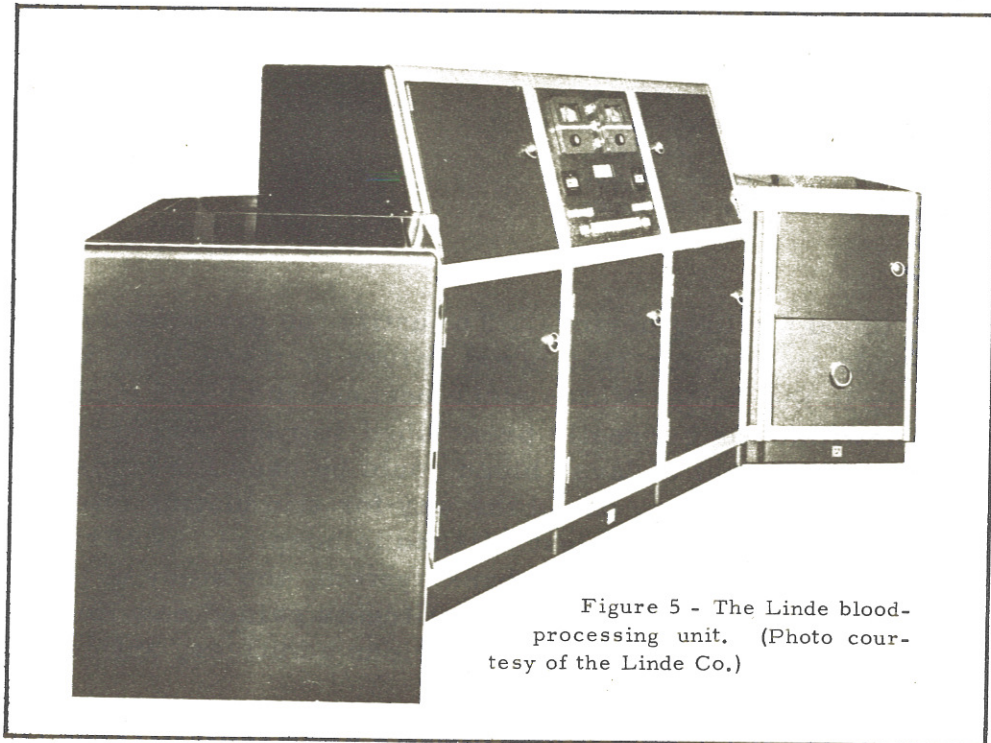


Figure 5 - The Linde blood-processing unit. (Photo courtesy of the Linde Co.)

Toward this end, the Linde Company has already achieved a major breakthrough in biologic engineering by developing blood-processing equipment for use in their new rapid-freeze procedure (Figure 5). With this equipment, a pint of blood can be frozen or thawed in one minute or less. From the standpoint of research, such apparatus is an important feature for it permits a rapid study of procedural variations in blood processing, such as changes in freezing or thawing rates or the frequency of shaking.

The current steps in processing a pint of fresh blood with this unit are as follows:



— A special container, shaking at 200 cycles per minute, is frozen in liquid nitrogen for about 45 seconds (Figure 6).

— Thawing proceeds at about 115°F for about 35 seconds at 200 cycles per minute.

— The thawed blood is stored in an ice bath at 32°F until it is needed. Once the frozen blood is thawed, it can be stored for as long as three weeks in the blood bank refrigerator. Although considerable work needs to be done, the potential of this process for establishing a simple, freeze-thaw, blood-preserving technique is great. Already, there is a growing international interest in the process.

### Research in Other Fields

Although cryobiologic research has been principally centered around finding optimum blood-preservation techniques, low-temperature research on other biologic systems has not been entirely neglected. Spermatozoa were successfully frozen and revived as far back as 1938. And in 1952, A. U. Smith worked on a freeze method of preserving fertilized rabbit eggs and found that one percent of the eggs survived after thawing. Although one percent is not a very high rate, it is enough to demonstrate that even a cell in such an unstable state does not necessarily succumb when exposed to low temperatures. Extending this phenomenon to microorganisms, scientists have found that survival can vary tremendously, depending on the temperatures involved, the rate of cooling and rewarming, and the nature of the medium in which they are suspended during exposure.

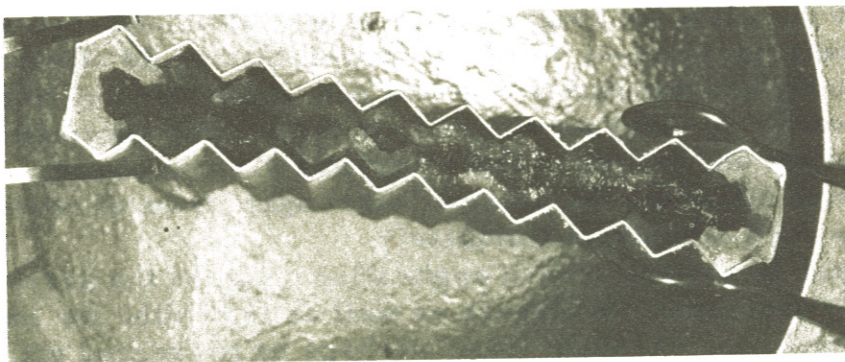


Figure 6 - Section through metal container used in freezing a pint of human blood in liquid nitrogen. During freezing, the blood migrates to the sides of the container leaving a central void. (Photo courtesy of the Linde Co.)

The problems involved in freezing highly organized animals, such as mammals, however, become more complex and perhaps appear insurmountable. Until a few years ago, it was thought that an adult nonhibernating animal, such as a rat, could not survive cooling to a deep body temperature below 69°F (at this point the respiration and heart beat cease). Yet the emperor penguin not only



supports life but contrives to incubate eggs and care for its chicks in Antarctic temperatures as low as  $-76^{\circ}\text{F}$ . The old ideas regarding the tolerance of mammals to freezing, however, were recently blown to bits by Radoslav Andjus of the University of Belgrade who by using special methods demonstrated that rats, mice, and dogs could be revived after cooling to deep body temperatures of  $32^{\circ}\text{F}$ . Rats so treated showed no impairment of either memory or learning capacity. These are only a few examples of what has been accomplished so far and serve to indicate the vast potential ahead.

### The Future

The expression "Where there is no vision, the people perish" is applicable to basic research in biology and medicine. Just as some of the infectious diseases fell before the onslaught of the army of broad-spectrum antibiotics, so may others succumb through further progress in biologic research aided by the valuable research tool, cryobiology.

There is no doubt that there will be many applications for the preservation techniques developed through cryobiologic research. In the area of "cryofixation," for example, low-temperature preparation techniques could be utilized to permit stabilization of the macromolecular matrix of biologic specimens for permanent preservation of their fine structure for study. Even relatively large specimens, such as whole brains of vertebrates, could be preserved intact with a minimum of chemical fixation. Looking further ahead, we foresee the long-term preservation and storage of live bacterial and cell or tissue cultures. A further advantage in preserving such cultures would be the elimination of the present laborious day-to-day transfer of a strain or colony to keep it going. One can also visualize the long-term banking of antibiotic-producing organisms as well as their products—a new development that would eliminate the terrific expense of today's continuous production and waste loss due to the unstable or short-lived nature of many antibiotics. In fact, some organisms die off even before evaluation and testing of their products are completed. Long-term preservation would eliminate the present "start again from scratch" routine necessary to study such organisms completely.

Another important area of application could be the arresting of chemical and other life processes, in disease as well as in health, for future study. Important enzymes, for example, could perhaps be preserved without loss of function. If this were possible, then more accurate studies of cells and tissues could be made without the hindrance of autolysis (literally self-destruction). Then too, the study of transient phenomena, through the preservation of time-labile characteristics (such as the transient state in a biochemical reaction or unidentifiable but important intermediates) may enhance molecular biology. And the ecologist and geneticist could preserve present generations of organisms for later comparison with future generations. Also, tissues affected by a present-day disease process or metabolic disturbance could be preserved and compared with diseased tissues in existence—say 10 years hence. Thus, changes in disease and genetic patterns possibly could be detected.



Looking far into the future, one might visualize the preservation of live flora or fauna to prevent the imminent extinction of a species. Museums might become interested in this possibility. Such an application cannot be dispelled as being impossible or fantastic for, theoretically, life virtually does experience a temporary halt at temperatures around and below the liquid-nitrogen range. The foregoing are only possibilities, the author admits, but they serve to illustrate the vast potential of cryobiology in the general fields of biology and medicine.

\* \* \* \* \*

Torsion of the Spermatic Cord  
in the Newborn Infant

D.B. Lester and G.H. Gummess. J Urol 86:631-633, November 1961.

Startled by the enthusiastic report of a "rare case" of torsion of the spermatic cord in a 3-day old infant, the authors were stimulated to review their thinking on this problem. Review of the literature revealed a total of 42 reported cases of hemorrhagic infarct of the testis in the newborn, the majority due to torsion of the spermatic cord. In private practice, they have seen 3 such cases in the immediate newborn in the past 5 years. In agreement with Tankin and Robbins, and others, they believe that the incidence is greater than noted and reported. The authors limit their discussion to those patients in what they arbitrarily designate the immediate newborn period, that is, in the first week of life.

Torsion of the spermatic cord is the axial rotation, or twisting of the cord, on itself, interfering with the vascular mechanisms of the cord and associated structures. Neither side is more frequently involved than the other; turn may be in either direction, and there is disagreement as to whether the rotation is more common in one or the other direction. The condition may occur at any age, but is most common in adolescents and young adults. There are two types of torsion: intravaginal, more common in the older patients; and extravaginal, more common in infants.

The etiology of spermatic cord torsion is not fully understood. It is generally agreed that some congenital abnormality and mobility of the testes are present. An unusually roomy scrotum may be present; there frequently is noted a high investment of the tunica vaginalis on the cord, with a long mesorchium. The mesorchial attachment to the lower testicular pole and globus minor of the epididymis may be abnormal or absent. Connective tissue between the parietal tunic may be long and lax, minimal, or absent. The more immediate cause of torsion is thought to be irregular, strong, cremasteric contractions, perhaps initiated by sudden muscular exertion in the presence of the anatomical abnormality. It has been shown that ischemia of the testis for one to two hours will cause irreversible spermatogenic damage, and persistence of ischemia over 6 hours will result in testicular infarction. However, this may also depend upon the degree of torsion as well as the duration. Invariably, if the problem occurs on one side, at least the anatomic defect(s) on the contralateral



side are probable and the occurrence of torsion is possible. Tissue changes of the testis in the face of spermatic cord torsion depend upon the acuteness and completeness of vascular obstruction. In the extreme, and without infection, dry gangrene (hemorrhagic infarction) results with later atrophy of the structure. If infection supervenes, suppurative infarction is noted.

In the immediate newborn child, subjective symptoms are absent, or at most, restlessness or fretfulness may be observed. Objectively, the scrotum may be enlarged with edema of the skin. The involved testis is firmer than normal, somewhat enlarged; the overlying skin may show slight discoloration. With formation of fluid within the tunics, the contents may be obscured, and transillumination may be noted. The patient is afebrile, and there are no abnormal peripheral blood changes. Frequently, it is the nurse who first notes the abnormal scrotum. Differential diagnosis in this age group is limited. Conditions to be considered are tumor, hernia, hydrocele, traumatic epididymo-orchitis, hematoma, and torsion of the testicular or epididymal appendices.

Treatment consists of immediate surgery: detorsion and fixation of the testis. The authors feel that fixation of the contralateral testis and cord should always be done. This latter may be accomplished through the same incision, across the scrotal septum, or even by a suture through the scrotal skin and dependent testicular structure. In their experience, orchiectomy is seldom necessary, even in the face of frank devitalization of the testis. Atrophy occurs, but the small nubbin of tissue remaining maintains normal scrotal appearance, and some small scrotal content is most satisfying to the older boy and man.

Recognizing that the majority of cases of spermatic cord torsion occur in the adolescent and young adult, the authors also feel that such a situation occurs more frequently than generally realized in the immediate newborn infant; in fact, it probably occurs in utero or during delivery. Closer attention to the genitalia of the newly born male infant would probably result in more diagnoses being made, more prompt treatment applied, and fewer atrophic testes being found in older boys. Treatment is prompt surgery, including detorsion and fixation of both testes in their scrotal compartments. With hemorrhagic infarction, the testis may be removed or left in situ according to the judgment of the operator. This problem should be made more fully known to all who practice obstetrics and care of the immediate newborn.

(From the Department of Urology, University of Southern California School of Medicine, Los Angeles, Calif.)

\* Read at annual meeting of Western Section of American Urological Association, Inc., Las Vegas, Nev., February 6 - 9, 1961.

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**Cholera and Cholera-type Disease.** Unofficially reported are over 2000 cases and 300 deaths due to a cholera-like disease occurring to date in the Philippine Islands. It appears to be spreading. Persons entering the U.S. within 5 days after leaving infected areas and the P.I. will be required to present a valid certificate of immunization against cholera. The Division of Foreign Quarantine recommends that all persons traveling to the Far East receive cholera vaccine.

(PHS, DHEW)



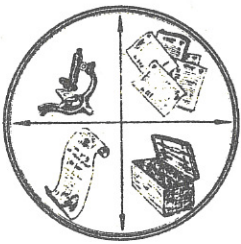
I<sup>131</sup> in Scintillation Kidney Scanning \*

T.P. Haynie, M.M. Nofal, E.A. Carr Jr, and W.H. Beierwaltes, Ann Arbor, Mich. J Lab Clin Med 58:598-604, October 1961.

Various I<sup>131</sup>-labeled contrast media were injected intravenously into ten dogs in 60 experiments to evaluate factors that would aid in production of a radioactive renal scintigram with the best contrast and definition. The contrast media used, the dose of radioactivity, rate of administration of the dose, time of starting the scan, and type of collimator used were of importance. The state of dehydration, use of adjunctive drugs, and abdominal binder and carrier did not enhance the quality of the scintigram. The technic consisted of 150 to 200  $\mu$ c of I<sup>131</sup>-labeled ortho-iodohippuric acid administered by intravenous infusion at the rate of 2 to 4  $\mu$ c per minute. The scan was started 20 to 30 minutes after the start of the infusion, using a 3 by 2-inch scintillation crystal detector with a 19-hole collimator, a spectrometer, and photoscanning. It was thus possible to delineate areas of infarction in dog kidneys scanned before and after ligation of renal arteries. Human kidneys also were delineated with this technic.

\* From the Departments of Internal Medicine and Pharmacology, and Clinical Radioisotope Unit, University of Michigan Medical Center, Ann Arbor, Mich. (Supported by a grant from the U.S. Atomic Energy Commission, Project 15.)

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## MISCELLANY

### Rear Admiral Alfred W. Chandler Receives Award

Rear Admiral Alfred W. Chandler DC USN (Ret) recently was presented the Legion of Merit by Rear Admiral Thomas H. Robbins Jr USN, Commandant, Potomac River Naval Command. The presentation was for the Secretary of the Navy on behalf of the President of the United States during a ceremony at the U.S. Naval Weapons Plant, Washington, D.C. Admiral Chandler's outstanding accomplishments were a reflection of his dynamic personality and leadership abilities. Aside from extensive improvement in the Dental Corps, he made highly effective contributions in the successful efforts of BuMed to gain increased recognition for Staff Corps achievements, including authority to use the term "Commanding Officer" for selected positions of great responsibility. Thus, all Staff Corps of the U.S. Navy received benefits from Admiral Chandler's dedication to progress. His citation follows:



THE SECRETARY OF THE NAVY  
WASHINGTON

The President of the United States takes pleasure in presenting  
the LEGION OF MERIT to

REAR ADMIRAL ALFRED W. CHANDLER  
DENTAL CORPS  
UNITED STATES NAVY (RETIRED)

for service as set forth in the following

CITATION

"For exceptionally meritorious conduct in the performance of outstanding service from August 1946 to July 1952 as Assistant Chief of the Bureau of Medicine and Surgery for Dentistry and Inspector General, Dental. Displaying extraordinary professional ability and resourcefulness, Rear Admiral Chandler skillfully directed the adjustment of the Naval Dental Corps to meet the trend of the times and the demands levied upon his organization incident to the Korean conflict. Making a marked contribution toward elevating the standards of dental care in the Navy and Marine Corps to the present-day high level, he was responsible for inaugurating many major improvements, including the establishment of a distinctive rating structure for dental technicians; obtaining the title of 'Commanding Officer' for Staff Corps Officers in Command; the development of naval regulations providing for dental departments in ships and shore stations; the establishment of the first dental school for technicians; and the development and administration of training programs for dental officers and technicians, including the first Navy motion picture used for that purpose. Under Rear Admiral Chandler's strong and capable leadership, the dental service of the Navy has achieved maximum readiness to respond to any demand that may be made upon it. In the field of dental research, he has been the guiding and driving spirit responsible for many and diverse advances and improvements. His outstanding achievements reflect the highest credit upon himself and the United States Naval Service."

For the President

*John B. Connally*  
Secretary of the Navy



Navy Doctor Receives Air Force Medal

LT Lewis B. Potvin MC USN recently received the U. S. Air Force Commendation Medal for "Meritorious Service" during the period October 1958 to August 1961 performed at the U. S. Air Force Hospital, Andrews Air Force Base, Washington, D. C. The medal was presented by COL Archie A. Hoffman, Andrews Hospital Commander, at the U. S. Naval Hospital, National Naval Medical Center, Bethesda, Md., where Dr. Potvin is currently assigned.

While stationed at the U. S. Naval Radio Station, Cheltenham, Md., from 1958 to 1961, Dr. Potvin volunteered to work nights at the Air Force Hospital when not performing his regular naval duties. COL Hoffman arranged a schedule enabling Dr. Potvin to gain additional experience in obstetrics and gynecology, including surgery.

Dr. Potvin resides with his wife, Dorothy, and three children at 4109 Conger St., Silver Spring, Md. (PIO, NNMC)

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Announcement of New Publication

A Manual of Radioactivity Procedure, Recommendations of the National Committee on Radiation Protection and Measurements, National Bureau of Standards Handbook 80, 159 pages, issued November 20, 1961, 50 cents. (Order from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.)

This manual was prepared by the Subcommittee on Standards and Measurements, to meet current needs in the field of radiologic measurements. The report presents a survey of the practice of radioactivity measurement with special reference to clinical and biologic applications. It is in three parts, entitled: Radioactivity standardization procedures, Measurement of radioactivity for clinical and biologic purposes, and Disposal of radioactive material.

The manual offers guidance in the practice of radioactivity measurement. It will be helpful to those setting up standards laboratories in radioactivity, as well as to those who are establishing radiation physics departments in hospitals or medical institutions, or embarking upon careers as hospital physicists.

NOTE: Foreign remittances must be in U. S. exchange and should include an additional one-fourth of the publication price to cover mailing costs.

(From: U. S. Department of Commerce, National Bureau of Standards, December 1961.

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Hospital Corpsman Honored. The Surgeon General has congratulated Nicholas R. Couture, Hospital Corpsman First Class, USN, aboard the USS DAVIS en-route from Bermuda to Newport, R. I., for successfully rendering emergency medical care to an injured crewman in response to a plea from the Swedish Flag Tanker, SEVEN SKIES, on 14 November 1961. (TIO, BuMed)

Directory of Blood Banks and Transfusion Services

Over 4500 hospitals, the American Red Cross, and community blood banks are now being surveyed to learn and record their identities and relationship to transfusion services and blood banking. Specific data is being gathered to determine the number of units of human blood collected and transfused by each institution. This and other information will be published early in 1962 in a third edition of "Directory of Blood Transfusion Facilities and Services" by the Joint Blood Council.

The Directory will also include information on technical and operating procedures, approvals, supervision, reciprocity exchange systems, tissue storage banks, and other pertinent data. Also, it carries a coded functional definition for each listed facility.

The two previous Directories, 1958 and 1960 editions, have met with marked success. Information helpful to hospitals, blood banks, medical libraries, Federal medical agencies, and Civil Defense planning groups is used daily.

The Joint Blood Council is a nonprofit organization formed and supported by the American Association of Blood Banks, American Hospital Association, American Medical Association, American Red Cross, and the American Society of Clinical Pathologists. Its primary purpose is to "establish a national blood program in order to assure an adequate supply of blood and blood derivatives to the civilian and military population at all times of peace or emergency." The Council's directory service furnishes a basis for such a program by locating and identifying transfusion services and blood banks, and recording their capabilities and dependencies.

All facilities which are collecting, processing, and using blood are requested to complete the directory data cards and return them immediately. No charge is made for the listing. The Directory service has the support of the Council's Member Institutions and the Federal medical services.  
(From: Frank E. Wilson MD, Executive Vice President, Joint Blood Council, Inc., 1500 Massachusetts Ave., N. W., Suite 832, Washington 5, D. C.)

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BUMED INSTRUCTION 6320.34

19 October 1961

Subj: Patient identification band; use of

Purpose. To prescribe the use of an identification band for all inpatients.

Background. The use of identification bands has previously been centered on the newborn. The importance of proper identification for patients receiving surgery, blood replacement, therapy, medication, and diagnostic examination is evident. The frequency of moving patients to and from surgery, to intensive-care units, X-ray, etc., adds to the possibility of patient misidentification.



### Intensive Course in Psychiatry for Medical Officers

A four-month intensive course in psychiatry will be offered for a limited number of Medical officers at the U.S. Naval Hospital, National Naval Medical Center, Bethesda, Md., starting 30 July 1962 and finishing 30 November 1962. The course will include didactic and practical instruction in basic clinical psychiatry, psychotherapy, psychiatric diagnosis, interview techniques, and principles of psychotherapy. Instruction will be provided by hospital staff members and selected civilian specialists. Each officer who successfully completes this course will be assigned for at least the following 19 to 20 months to a psychiatric billet in a naval facility under an experienced psychiatrist. Applicants must, therefore, have at least approximately 24 months of obligated service at the start of the course. There is no additional obligated time for the course of instruction. Interested applicants should submit requests to the Chief, Bureau of Medicine and Surgery, no later than 15 February 1962.

It is suggested that the letter of application include any information concerning particular interest, experience, or training in the general field of psychiatry, neurology, or the basic sciences related thereto, such as summer clerkships, research in the field, or assignments in mental hygiene clinics or psychiatric hospitals. Such experience is not mandatory but would be helpful in evaluation of the applicants. (NP Branch, Professional Division, BuMed)

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### Wynoochee Water Runs High - Bagdad Has a Long Dry Spell

Colorado Springs, Colo. In the headquarters of the 4th Weather Wing (MATS) there hangs a map with the heading "Weather Extremes Around the World." Put out by the Air Weather Service Observer in 1959, it may not be entirely current, but some of the information contained gives a good example of why everybody talks about the weather.

For instance, the greatest average annual precipitation anywhere in North America is 156 inches at Wynoochee, Wash.; the longest dry spell recorded is 767 days, October 1912 to November 1914, at Bagdad, Calif.

The greatest single season snowfall in the U.S. was 1000.3 inches at Paradise Ranger Station, Wash., in the winter of 1955-56; the highest recorded temperature was at Death Valley, Calif., July 10, 1913—134°F; the world's highest recorded surface wind speed was 231 mph at Mt. Washington, N.H., April 12, 1934.

North America's lowest recorded temperature was -81°F at Snag, Yukon, February 3, 1947; the largest officially recorded hailstone, 5.41 inches in diameter, fell at Potter, Neb., July 7, 1928.

When the time element enters the picture, figures grow even more fantastic. The greatest 24-hour snowfall recorded in the U.S. was 76 inches, April 14 - 15, 1921, at Silver Lake, Colo.; one of the world's greatest concentrations of rainfall was 12 inches in 42 minutes, June 22, 1947, at Holt, Mo.

The world's greatest recorded 2-minute temperature rise was 49°F from -4 to 45°F at Spearfish, S.D., January 22, 1943; and the greatest recorded U.S. 24-hour temperature fall was 100°F—from 44 to -56, January 23 - 24, 1916, at Browning, Mont.

(From NORAD News Service—reported by NAVNEWS, 15 December 1961)

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#### From the Note Book

People to People Program at Work. An operation at the U.S. Naval Hospital, Yokosuka, restored hearing to Masao Suzuki, 20, following a lifelong ear ailment that made him unable to hold a job. Suzuki, son of Mr. and Mrs. Kinai Suzuki of 700 Tsurumi, Cho Tsurumiku, Yokohama, appealed to the American Consul in Yokohama asking for help after other operations failed to restore his hearing. The plea was brought to CAPT William N. New MC USN, Commanding Officer, U.S. Naval Hospital, Yokosuka, who offered to treat the boy at the Yokohama Navy Dispensary. LCDR Robert H. Donald MC USN, after three months of treatment, decided that an operation was needed. On 24 November 1961, Doctor Donald performed the operation that proved successful in restoring normal hearing to Suzuki. To express their thanks to the U.S. Naval Hospital, Masao Suzuki and his family visited the hospital, talked with CAPT New and LCDR Donald, and toured the facilities there. (Commander, Naval Forces, Japan, PIO)

Medical Consultants of Armed Forces' Meeting. The Society of Medical Consultants to the Armed Forces held its sixteenth annual meeting at the National Naval Medical Center, Bethesda, Md., November 26 and 27, 1961.

Ambassador Arthur H. Dean, Chairman of the U.S. Delegation to the Conference on the Discontinuance of Nuclear Weapons Tests and Delegate of the United States to the Sixteenth General Assembly of the United Nations, was to have been the principal speaker at the Society's annual dinner held in the Commissioned Officers Club at the Center, but could not attend due to resumption of nuclear test talks at Geneva. Speaking instead was Mr. Adrian S. Fisher, Deputy Director, U.S. Arms Control and Disarmament Agency.

At the professional meeting, RADM Frank P. Kreuz MC USN, Commanding Officer of the National Naval Medical Center, welcomed members of the Society and extended his best wishes for a successful meeting. The President of the Society, Dr. Frank Glenn, made the opening remarks and introduced RADM William C. Mott USN, Judge Advocate General of the Navy, who gave the principal address. Among those who participated in the Society's professional meeting were CAPT John R. Seal MC USN, Commanding Officer of the Naval Medical Research Institute, National Naval Medical Center, Bethesda, Md., who spoke on "Research in the Middle East," and CAPT Gerald J. Duffner MC USN, Director of the Submarine Medicine Division, Bureau of Medicine and Surgery, whose topic was "Recent Experiences in Submarine Medicine."



The Society is composed of approximately 400 distinguished civilian physicians who have served on active duty as commissioned Medical officers in the medical services of one of the Armed Forces of the United States and who have served as consultants or in equally important capacities to a component of the Armed Forces. Among their primary purposes are to acquaint the civilian medical profession with military medicine, to give advice and assistance to the Surgeons General, and to foster an awareness of the obligation of civilian physicians to participate in the continued development of the Medical Services of the Armed Forces. (Public Info Office, NNMC, Bethesda, Md.)

NavSta Hospital, Subic Bay, Helps Fight Cholera. Staff members of the Naval Station Hospital at U.S. Naval Base, Subic Bay, Republic of the Philippines, have been helping the Philippine Department of Health recently in battling cholera through lectures, symposiums, and treatment of persons with the disease. LCDR John W. Cox MC USN, Chief of Medicine, joined the U.S. Naval Medical Research Unit from Taiwan in treating 350 severely ill cholera cases in Manila. LT Pliny Keep MC USN assisted during heavy concentration of cases. The Philippine Dept of Health requested the services of the Research Unit from Taiwan because of their experience with cholera in Thailand. The Unit requested the Naval Station Hospital to provide additional medical personnel. (TIO, BuMed)

New President of Association of Military Dermatologists. CAPT C. W. Norman MC USN, Chief of the Dermatology Service, U.S. Naval Hospital, San Diego, Calif., was elected President of the Association of Military Dermatologists at the 20th annual meeting of the American Academy of Dermatology held in Chicago, Ill., December 2 - 7, 1961. The Association of Military Dermatologists is composed of 172 members representing the Army, Navy, Air Force, and U.S. Public Health Service. The purposes of the Association are: to bring into one organization dermatologists of all branches of the Armed Forces and the U.S. Public Health Service; to further professional advancement of its members; to aid in the improvement of the art and science of dermatology within the Armed Forces; to further professional contacts of military dermatologists; and to publish an informational bulletin at quarterly intervals.

CAPT Norman has been the Chief of the Dermatology Service at the Naval Hospital, San Diego, since July 1959. He took his residency training in the specialty of dermatology at the U.S. Naval Hospital, San Diego, from July 1955 to July 1957, and spent his third year of training in the University of Southern California Postgraduate School of Medicine at Los Angeles, Calif. He is a graduate of the Ohio State University School of Medicine.

Skin Germicides Before Surgery. In controlled studies, organic iodine compounds, hexachlorophene, and dibromosalicylbromanilide were all superior to soap and to benzalkonium chloride for skin preparation for patients and surgeons before surgery. Halogen compounds showed no important differences in germicidal action. (Henry Mannix Jr and Peter Dineen. "Germicides" for Skin Preparation Before Surgery. Arch Surg 83: 752-757, November 1961)



**DENTAL****SECTION**Oral Surgery for Dental Prosthesis

George P. Quirk, DDS, Veterans Administration Hospital, Houston, Texas. Dental Clinics of North America, November 1959, pp. 723-733.

**Objectives of the Alveolectomy**

There are many methods and ideas used in the performance of an alveolectomy. All of these usually have the same objectives in mind. There are the ultraconservatives who wish that no alveolectomy be performed, and there are those who elect to remove bone radically. In the final analysis, a conservative approach is better for the patient. No more tissue than necessary should be removed. The flap should be reflected to allow sufficient access, but no more, as excessive undermining may reduce the depth of the sulcus following organization of the clot in the dead space under the flap.

The prosthodontist's wishes should be paramount, for he is the one who has the problem of pleasing the denture patient year after year. Consultations should be obtained prior to surgery, with study models for reference at the time of surgery.

Fundamental surgical principles should be applied. The tissue should be handled gently—using pick-up forceps, sharp instruments, and avoiding tension on the flaps. The area should be debrided of spicules of bone and unhealthy tissue prior to closure. Sutures are best placed over bone which will give support to the soft tissue. Suturing will reduce undesirable dead space.

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The Control of Pain and Apprehension  
and Use of Local Anesthesia in Periodontics

Lewis Fox, DDS, 72 West Avenue, South Norwalk, Conn. Dental Clinics of North America, July 1961, pp. 329-340.

Periodontal therapy embraces surgical procedures; hence, the control of operative pain is essential. With the variety of operations, especially those pertaining to excision and mucogingival procedures, effective and long-lasting anesthesia is imperative. Periodontal treatment may be classified as scaling,



curettage, excision procedures, correction of osseous defects, and operations in the mucogingival and vestibular fornix area. Each has different requirements as to the intensity and duration of anesthesia. Also important is whether the therapy will be in the area of the maxilla and/or mandible.

Scaling is the removal of calculus. Since these accretions are firmly attached to the tooth and adjacent to the soft tissues, the latter must be displaced in order to engage the calculus by the instrument for removal. This can be painful, and for effective management, it is often necessary to use some form of anesthesia or analgesia. Topical anesthetics have long been utilized in this regard.

When the subgingival accretions are found in the presence of retractable gingival tissues, the anesthetic requirements are less, but when calculus is present in long tortuous pockets with tight adherent gingiva, pain can be expected. In these instances, topical anesthetic applications may not be sufficient and injected local anesthetic solutions may be necessary. Often inhalation nitrous oxide alone may allow freedom of manipulation by the dentist without pain.

Curettage is the soft tissue debriding procedure in the sulcated area, and as such it is painful. In most instances, the obtundent effect of topical anesthetic is not adequate and the injected local anesthetic solution is demanded.

In apprehensive patients, nitrous oxide analgesia combined with injected local anesthesia induces euphoria and dissociation from environment.

In those operations confined to marginal and attached gingiva, the interdental papillary injection is the procedure of choice.

Where mucogingival and oral vestibular surgery are indicated, the local anesthetic solution is deposited in the area surrounding the periodontal lesion. Palatal lingual injections are given where they are indicated.

The impact of a changing concept concerning the understanding of apprehension and pain should and can be transmitted to patient management. The preoperative, operative and post operative phases of the handling of the periodontal patient represent a challenge to and a responsibility of the dentist. There is no substitute for knowing the patient and the patient knowing you, as well as a sympathetic understanding of his or her dental problem.

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#### Personnel and Professional Notes

Honor for Rear Admiral Alfred W. Chandler DC USN (Ret.). Rear Admiral Alfred W. Chandler DC USN (Ret.) recently was presented the Legion Of Merit by Rear Admiral Thomas H. Robbins, Jr., USN, Commandant, Potomac River Naval Command, for the Secretary of the Navy on behalf of the President of the United States during a ceremony at the U.S. Naval Weapons Plant, Washington, D. C. A full report of the citation and reference to Admiral Chandler's noteworthy contributions appear in the Miscellany Section of this issue of the USN Medical News Letter.



Survey of Dental X-Ray Equipment. The Dental Division of the Bureau of Medicine and Surgery, in cooperation with the U.S. Public Health Service, Division of Radiological Health, will conduct a Navy-wide evaluation of all dental x-ray machines. This evaluation will be accomplished by utilizing the Public Health Sur-pak, which is the shortened name for the dental x-ray mail order, film step-wedge technic. The Sur-pak procedure is designed to check the approximate roentgen output in mr/mas, total filtration (inherent and added), collimation, beam symmetry and leakage radiation from the portal end of the tube head. During January 1962, each dental facility will receive one Sur-pak for each dental x-ray machine in use with complete instructions for conducting this survey.

Viral Hepatitis Prevention. There have been reports of many well documented cases of viral hepatitis following the use of non-sterile needles and syringes, or other instruments contaminated with blood.

It is known that 0.01 ml of serum containing hepatitis virus is infectious. One cannot depend upon this virus being destroyed by chemical agents commonly employed for disinfection, or by boiling water. The Council on Dental Therapeutics of the American Dental Association recommends that instruments which may penetrate the soft tissues, especially needles used for injections, should be sterilized in a steam autoclave at 121° C for at least 15 minutes. Because blood may be drawn into the syringe inadvertently as a result of back pressure, or intentionally during pre-injection aspiration procedures, barrel and plunger type syringes should be treated in the same manner. (Accepted Dental Remedies 1960, page 87)

Newly Standardized Items. The Armed Services Medical Materiel Coordination Committee has completed coordination with the Army, Navy, and Air Force as to the desired characteristics of the below-listed items:

- 6520-754-2769 RUBBER DAM, Medium, 6 inch square
- 6520-754-2770 RUBBER DAM, Heavy, 6 inch square
- 6520-817-2297 BAND SET, MATRIX, Dental Tofflemire
- 6520-817-2513 MATRIX, CROWN, DENTAL, Plastic, Central, Medium
- 6520-817-2514 MATRIX, CROWN, DENTAL, Plastic, Cuspid, Large
- 6520-817-2517 GOLD FOIL, Cylinder, size 1/64, 2DWT
- 6520-817-2518 GOLD FOIL, Cylinder, size 1/16, 2DWT
- 6520-817-2519 GOLD FOIL, Cylinder, size 1/32, 2DWT
- 6520-817-2529 FORCEPS, Casting Removing, 6 1/2"
- 6520-817-2558 FLOSS, Waxed, Dental, Flat
- 7530-890-1015 ENVELOPE, Radiographic Film Mount, Dental  
5 1/2 x 9 1/4"
- 7530-890-1016 ENVELOPE, Radiographic Film Mount, Dental  
3 1/8 x 5 1/2"

Additional information will be disseminated when these items are available in the depots of the medical supply system.



Reserve Dental Officers Attend Program at New London. Fifteen U.S. Naval Reserve Dental Officers recently attended a three-day training program conducted by personnel of the Naval Medical Research Laboratory, Submarine Base, New London, Connecticut. The training period included tours of and lectures at the following: Submarine Base Dental Department, Escape Training Facility, Nuclear Submarine, Medical Research Laboratory, Charles Pfizer, Co., Inc.

Among the officers conducting the training sessions were:

Cdr G.F. Bond MC USN, Officer in Charge of the Medical Research Laboratory; Capts H.B. McInnis, A.G. Nielsen, and F.P. Scola DC USN; and Lt M. Perlitch DC USNR.

CAPT Ferguson Presents Paper. Capt G.W. Ferguson DC USN, Head, Officer Education Department, U.S. Naval Dental School, NNMC, Bethesda, Md., presented a paper entitled Restorations Using Silver Amalgam before the American Academy of Dental Science meeting held 1 November 1961, at the Parker House Hotel, Boston, Massachusetts.

CAPT Kyes Presents Lecture. Capt F.M. Kyes DC USN, Director of Dental Activities, 9th Naval District, addressed the Chicago chapter of the Armed Forces Management Association at Fort Sheridan, Ill., on 21 November 1961. His subject was Organization Planning and Analysis.

CDR Wachtel Participates in Symposium. Cdr Louis W. Wachtel MSC USNR, Head, Biochemistry Branch, U.S. Naval Dental School, NNMC, Bethesda, Md., presented a paper entitled Effect of Tin and Fluoride Ions on Enamel Solubility at a symposium conducted 2-3 November 1961 at the University of Zurich, Zurich, Switzerland.

CAPT Thayer Placed on Retired List. Capt Ernest A. Thayer DC USN was placed on the Temporary Disability Retired List of the Navy on 20 November 1961. Capt Thayer was born in Pontiac, Ill., and graduated from the Chicago College of Dental Surgery in 1933. From 1933 to 1942 he conducted a private practice in Chicago, Ill., where he specialized in prosthodontics. In August 1942 he accepted a commission as Lieutenant in the Dental Corps, U.S. Navy Reserve, and reported in January 1943 to the U.S. Naval Training Center, Great Lakes, Ill., for his first tour of active duty. Among the ships and stations where Capt Thayer served were the USS Briareus, USS Yosemite, and the U.S. Naval Air Facility, Port Lyautey, French Morocco. He also served as the Director of Training at the U.S. Naval Dental Technician School (Prosthetic), Bainbridge, Md., from June 1951 until December 1954. Prior to his retirement he was on duty at the U.S. Naval Training Center, Great Lakes, Illinois.

Cherry Point Dental Department Hosts Dental Meeting. Dental officers attached to the Marine Corps Air Station, Cherry Point, North Carolina, Dental



Department which includes personnel of the station and 12th Force Dental Company, FMF, (Air), were hosts for a professional meeting at the Cherry Point Commissioned Officers Mess (Open) on 22 November 1961. The meeting was preceded by a guided tour of air station facilities. David Livingstone "Libby" Ward Esq., former Speaker of the House in the North Carolina General Assembly and a prominent attorney, was the guest speaker. The subject of his talk was Malpractice and its Possible Consequences. The program was attended by 75 military and civilian dentists from the coastal North Carolina area. Capt R.J. Wallenborn DC USN is the Commanding Officer of the 12th Force Dental Company and Senior Dental Officer of the Air Station.

Referral of Patients for Prosthetic Care. Article 6-103(4), Manual of the Medical Department requires that Dental officers on duty at activities without prosthetic facilities insure that all oral surgical and operative treatment has been completed on personnel being referred to other commands for prosthetic care. Professional courtesy and the interests of the patients also require that Dental officers personally notify the prosthodontist in advance of the names, dental needs, and any other pertinent information concerning patients to be referred for prosthetic treatment. No patient should be sent for prosthetic care until an appointment time has been obtained by the referring Dental officer from the prosthodontist. It is especially important for Dental officers in ships to send advance notice of their prosthetic patients when their ships have a short stay in port. This advance notification is necessary to enable prosthodontists to reserve or change appointments to care for patients from ships who require the restoration of extensive loss of masticatory function or the replacement of anterior teeth for esthetic reasons.

Scrap Dental Metals. In January and July of each year (or upon decommissioning or disestablishment), the commanding officer or officer in charge of a naval Dental activity, the Dental officer of a ship or station and the commanding officer of a U.S. Naval Hospital or U.S. Naval Dispensary shall forward, for disposal, all scrap dental metals to the appropriate disposal site in accordance with instructions contained in Chapter 6-166, Manual of the Medical Department.

A study was conducted to determine the value of this scrap metal returned to the supply system. These dollar amounts, which cover a two-year period, speak for themselves: NSC, Oakland, \$30,667.23; NSC Bayonne, \$46,000.00 TOTAL \$76,667.23. Every effort must be expended to insure maximum effective use of dental metals and the timely return of all scrap.

CAPT Hansen Presents Lectures. Capt Louis S. Hansen DC USN, Chief, Dental and Oral Pathology Division, AFIP, Washington, D.C., presented lectures at the following dental society meetings. On 12 December 1961, Capt Hansen spoke before the 8th District Dental Society of the state of New York in Buffalo; his subject was Roentgenographic Diagnosis of Oral Pathoses. At Fairfax County (Va.) Dental Society meeting on 14 December 1961, Capt Hansen's topic was Oral Pathology for the General Practitioner.





## PREVENTIVE MEDICINE

### Respiratory Disease and Influenza

Morbidity and Mortality Weekly Report, PHS DHEW, Vol. 10(49): 1-2,  
15 December 1961.

Respiratory Disease. Type B influenza has been identified in outbreaks of respiratory disease in Arizona, Florida, Jamaica, B.W.I., Saskatchewan and Aruba Island (N.W.I.). Respiratory diseases of unidentified etiology reported in California and Oregon since mid-November have continued to spread in these areas. No new outbreaks have been reported.

Confirmed Type B Influenza Outbreak in Arizona. The outbreak of respiratory disease which began in mid-November in the Hopi and Navajo Indian Reservation in northeastern Arizona has been identified as Type B influenza. Seven of 10 paired sera obtained during the outbreak show significant titer rises for Type B influenza. Positive sera were obtained from the Hopi Indian Reservation, as far west as Grand Canyon and from Fort Defiance, Arizona, on the New Mexico border.

Clinical characteristics of the illness included fever of over 100-101°, severe sore throat with cough, minimal conjunctivitis, absence of pulmonary involvement, myalgia and frontal headache. The acute symptoms last for 2 or 3 days.

The Keams Canyon School on the Reservation presented an unusual opportunity for study of vaccine effectiveness. Those children who board at the school had been vaccinated; the day school children had not been vaccinated. All boarders were brought to the U.S. Public Health Service Indian Hospital Clinic if there was any indication of illness. Of 320 boarders in the immunized group, only 1 case of clinical influenza has been noted by the clinic physicians. Of 120 day students who were not immunized, there have been 26 cases of clinical influenza.

#### Attack Rate

|               |       |
|---------------|-------|
| Immunized     | 0.3%  |
| Not Immunized | 22.0% |

Laboratory studies on these groups are in progress.



Hepatitis Associated With Raw Oysters

James O. Mason and Wilbert R. McLean, Communicable Disease Center, Atlanta, Ga., PHS-DHEW. Infectious Hepatitis Traced to the Consumption of Raw Oysters: to be published.

During the first 3 months of 1961, 80 cases of infectious hepatitis, which were traced to the consumption of raw oysters, occurred in the cities and surrounding areas of Pascagoula, Mississippi and Mobile and Troy, Alabama. Four additional cases in residents of New York, New Jersey, and Pennsylvania were identified as involved in this outbreak. The outbreak was brought to the attention of the U. S. Public Health Service, Communicable Disease Center, Atlanta, Georgia, by the Navy Medical Department when a naval medical officer\* stationed in Pascagoula became concerned over the locally rising incidence of hepatitis in the community.

An investigation of the outbreak began in February 1961. Patients were located through contacting local physicians, examining hospital records, and school absentee reports. Each case identified as having hepatitis was visited by a physician or nurse and a detailed clinical and epidemiological history was obtained. The information obtained suggested that the outbreak had characteristics of common source transmission. The age distribution of cases in Pascagoula and Mobile showed an unusually high incidence in adults, predominantly males. The study showed that ingestion of raw oysters was common to a high proportion of cases.

Further investigation into the source of the oysters revealed that the commercial shippers received oysters from harvesters working in waters at the mouth of the Pascagoula River, which had been closed to commercial fishing since 1931 by order of the State Board of Health of Mississippi. The Pascagoula sewage treatment plant had been closed in October 1960 to permit construction of a larger plant. Raw sewage entered the river 1 mile above its mouth. Since hepatitis cases were occurring in the County during October, November and December 1960, the presence of the virus in the sewage would seem a likely possibility.

Investigation of the hepatitis outbreaks in Mobile and Troy, Alabama, also revealed that the consumption of raw oysters was a common factor among the cases. Further inquiry revealed that the oysters consumed by the hepatitis patients in these cities were also harvested from the Pascagoula River mouth.

Oysters were implicated as a vehicle of hepatitis transmission in Sweden in 1955. This is the first report of this mode of spread in the United States.

Events in the East Coast, subsequent to the above investigation, relating raw clams to hepatitis have shown that contaminated shellfish may be a major problem. A history of ingestion of shellfish should be routinely sought in the investigation of infectious hepatitis, particularly when adult cases occur in a population where seafood is an accessible item. (Communicable Disease Branch, PrevMedDiv, BUMED)

\* Lt E.G. Theros MC USN

### Preventive Medicine in Naval Hospitals

Where does Preventive Medicine fit into the hospital environment? It could be said that the Preventive Medicine Units, the Sanitation Officers or the Environmental Sanitation Technicians, in doing their work, set the stage for activities concerning procedures, respect for pertinent BUMED Directives, cleanliness and healthful surroundings for patients and staff members alike. Therefore, Preventive Medicine efforts should extend over a wide range of services, such as to observe, suggest and encourage better preventive and sanitation procedures to the Commanding Officer, the maintenance officer, the various Chiefs of Service, the dietitian in the food service areas, or anyone who may be concerned.

While making survey visits, the Sanitation Officer should look for signs and symptoms of the health hazards in the hospital environment. These may include mixed usage of clean and dirty utility rooms, the lack of vacuum breakers in new plumbing or, during times of construction and remodeling, to be aware of the lack of precautions taken in keeping dust and dirt out of the normal hospital operation.

It could be said that one of the missions of the sanitation officer doing hospital work is to break the ever-possible chains of infection — particularly staphylococcus, which raises the question: "How clean are our hospitals?" This chain of infection can originate from the damp soiled linen in the warm laundry room or on its way to the laundry; or contaminated air being dispersed by the ordinary fan located in food service areas, in the sterile water supply, or in the pharmacy rooms. Also, this infection may be dispersed by careless floor cleaning practices. These are but a few of the many phases of a planned hospital environment program which require attention. Among other things it is important that a sanitation officer doing hospital survey work use good judgement along with his background experience of basic sanitation, which in today's modern hospital covers water, ice, sewage, housekeeping, refuse and garbage disposal, plumbing, insect and rodent control, and food operations, including the training of food workers.

It is necessary to know something about the principles and functions of the major items of equipment and methods and procedures in a hospital. One does not necessarily have to be a specialist in all of the hospital's technical aspects. However, enough should be understood to appraise its various departments in regard to sanitation and safety, food service, and maintenance training needs.

It is important for the sanitation officer to understand the problems, the responsibility of the various services and departments of the hospital and to maintain good relations with all personnel. There should be regular staff meetings at which problems are discussed and satisfactory solutions agreed upon by all concerned.

The sanitation officer in carrying out his responsibilities must make routine checks of the hospital at all times; present instructions to maintenance and food service personnel; consult with the architect, administrator and



hospital board; work with specialists on specific hospital sanitation problems; produce sanitation reports, citing references and resources applicable to specific situations; and become identified as the individual from whom responsible representatives might seek consultation on matters of hospital environment.

Some of the potential health hazards that have been reported from military and civilian hospitals are reviewed, such as airborne bacteria in food service areas, sterile supply rooms, and pharmacies, as already mentioned. Uncomfortable room temperatures have resulted in the promiscuous use of fans. As many as 6 fans have been found in a single room, blowing directly onto food. This condition has also been noted in connection with sterile bandage processing, as well as with pharmaceutical and drug preparations. Apparently, at the time plans for new hospitals and hospital additions were reviewed by the various departments concerned, not enough consideration was given to the comfort and well-being of personnel. The human element has not been afforded the attention it deserves.

The improper use of ventilating fans was found in hospitals which have their own laundry systems. In one case the soiled linen was being transported by cart from the various floors to the laundry room, then dumped into what eventually became a large pile on the floor for sorting. On the laundry roof and directly over this pile of soiled linen was a large blower exhausting to the outer air, which had to be checked to determine if air-borne bacteria were reaching open windows or ventilation inlets. However, fans that were placed in the warm laundry rooms for the comfort of the personnel working there, were blowing directly over this pile of soiled linen toward mangles and piles of clean ironed linen. This situation was corrected by having the linen brought down in closed bags from each respective ward and dumped directly into the laundry washers.

The proper sanitary procedure in washing, sanitizing, and filling bed-side carafes and drinking glasses in some cases was found to be sadly neglected due to a situation which exists in some of today's modern hospitals. The division of labor and the shifting of responsibilities for this task among nurses, lay help (or others working part time) should probably share most of the blame. Patients' bed-side drinking utensils must be washed and sanitized, as needed, in the regular dishwashing areas.

A periodic survey must be made of hospital waste disposal system and the method of operating it. Most of the hospitals have approved disposal facilities for food wastes, but evidence has been found of improper disposal of empty plasma containers, discarded intravenous tubing, syringes, and other wastes which attract flies and children. In one case complaints were received where children had made use of discarded disposable type of syringes for squirt guns.

Also biological wastes resulting from patient care and materials of medical origin, such as gauze dressings and bandages, swabs, sputum cups and paper bags containing paper tissues soaked with secretions of the nose and throat have been found in open drums. These types of waste materials are best

disposed of by well-supervised and complete incineration.

A laxity of good housekeeping prevailed in many of the hospitals. Areas most frequently in the need of attention were ventilation ducts, grids and louvers, overhead fixtures, and behind wall radiators.

All food operations are given special and continuous attention. Supervisors and dietitians are instructed and advised to go above and beyond the minimum of sanitation requirements. Hospital food handling personnel are required to attend group classes for a total of eight hours and courses of two hours of instruction in sanitary food services. These courses are required by SECNAVINST 4061.1 of 11 Aug 1953.

In summing up, a hospital sanitation program is a long tedious operation requiring detailed planning and continuous self-improvement by keeping up to date on hospital manuals and other reference materials relating to sanitation. Effective results depend upon keen observation, close attention to duty, free discussion of problems, deliberation, and consistency. The area Preventive Medicine Units are always available for assistance, consultation, and guidance for particular problems which may arise and cannot be solved locally. The services of these Units may be requested in accordance with BUMEDINST 6200.3A of 2 July 1957. (Preventive Medicine Division, BUMED)

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Prophylactic Effect of Topically Applied Cedarwood Oil  
on Infection with Schistosoma Mansoni in Mice

W. C. Campbell and A. C. Cuckler.\* Amer J Trop Med, No. 5, 10: 712-714, September 1961.

Ether solutions containing as little as 1% yellow cedarwood oil gave complete protection against Schistosoma mansoni infection for 4 hours. A 50% solution was fully effective even after 3 days, but not after 5 days. Viscous undiluted linseed oil gave no protection, indicating that the protective action of cedarwood is not due merely to a physical oil barrier. The colorless, nonviscous cedarwood oil proved to have no protective action, even when applied undiluted 3 to 4 hours before exposure; this oil was not used in subsequent experiments.

A 2% solution of cedarwood oil in ethanol was also fully effective after 4 hours, and a 1% solution gave a large measure of protection for this period. Alcoholic lotions, however, did not possess the long-lasting property of ether solutions. After 24 hours, even 20% cedarwood oil in alcohol did not provide an appreciable measure of protection.

Mice which had had their tails dipped in ether lotions containing 20% cedarwood oil, and had then been washed for 4 hours in running water, remained completely resistant to infection through the tail. On the other hand, ointments containing 20% cedarwood oil were apparently removed by this washing procedure. Treatment with such ointments was 100% effective if the tails were unwashed, but was completely ineffective after washing.



If shavings of cedarwood were dropped into a suspension of cercariae of *S. mansoni*, the cercariae were promptly killed. (This was true also of pine shavings, but mice bedded in pine shavings did not resist percutaneous infection.) Water in which cedar shavings had steeped overnight was rapidly lethal to cercariae, as also water which had been allowed to stand overnight in contact with commercial cedarwood oil.

When cercariae were poured into a dish, the bottom of which had been lightly smeared with commercial cedarwood oil, the cercariae died within 5 minutes. Cercariae similarly exposed to smears of ointment containing 20% cedarwood oil in a lanolin base died within 30 minutes. Cercariae exposed to control smears of lanolin were still swimming actively after 1.5 hours, though they were dead within 17 hours.

In an effort to observe directly the response of cercariae to skin treated with cedarwood oil, the abdomens of mice were shaved and swabbed with 10% cedarwood oil in ether. After 24 hours the mice were anesthetized and arranged with their abdomens immersed in a suspension of cercariae. Within 1 hour the cercariae had dropped to the bottom, where they remained twitching abnormally for several hours. Treatment of mouse tails with 10% cedarwood oil (in alcohol or ether), followed by 1 hour of washing in running water and 2 hours of drying, produced similar results when the tails were immersed in cercarial suspensions.

Undiluted East Indian sandalwood oil, under experimental conditions similar to those described above, provided complete protection against *S. mansoni* for at least 3 days. A 50% solution in ether was fully effective for 2 days but not for 3 days.

A 10% solution of clove oil in ether gave 100% protection after 4 hours, but not after 24 hours. A 1% solution was ineffective 4 hours after application.

Undiluted pine-needle oil was fully protective 4 hours after application; the protection provided by a 10% solution, after the same interval, was almost complete.

No protection was provided by application of undiluted wormwood oil 4 hours before exposure.

The prophylactic action of topical cedarwood application is not clearly understood, but there is evidence to suggest that cedarwood oil can act both as a repellent and as a larvicide. Where the oil is deposited on the skin surface, the diffusion of an active principle from the surface to the water provides a repellent barrier to cercariae. The long-lasting effect of ether preparations, and their resistance to washing suggests that an active principle is carried into the skin by the ether, possibly being deposited in the underlying fat. In this case it is likely that, even if the active agent is washed from the skin surface, the cercariae are killed upon penetration of the skin. Histological examination is required to confirm this hypothesis.

Since prophylaxis against cercarial penetration has been produced by plant oils other than cedarwood oil, it is possible that the protection is due, not to specific antischistosome chemical factors, but to physical properties common to several oils.

The refractoriness of mice bedded on cedarwood shavings, and the 24-hour protection provided by a 10% lotion of cedarwood oil, suggests that there is in cedarwood an agent whose capacity for preventing the penetration of skin by cercariae of S. mansoni may well exceed that of the substances previously reported.

It is clear that application of prophylactic materials to the skin is impracticable as a means of controlling schistosomiasis on a large scale. However, under certain limited circumstances the prophylaxis of schistosomiasis by treatment of the skin may be feasible. Assuming that suitable pharmaceutical formulations could be devised, cedarwood preparations would offer several advantages, viz., (1) long period of protection and resistance to washing; (2) ready availability, probably at low cost; and (3) aesthetic acceptability. The results reported herein further suggest that it may be possible to extract from cedarwood or other plant oils, an active agent useful in the prophylaxis of schistosomiasis.

\* Merck Institute for Therapeutic Research, Rahway, New Jersey

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An Outbreak of Salmonella Food Poisoning  
Attributed to Bakers' Confectionery

R. W. S. Harvey, et al., Public Health Laboratory, Cardiff, Wales. J Hyg, Vol. 59, No. 1: 105-108, March 1961.

The Outbreak. On 10 December 1959, in the afternoon, approximately 270 children of a junior school in Glamorgan, Wales, attended a school Christmas party. On Friday, 11 December, only 219 children attended school and of these many were taken ill during the morning with vomiting and diarrhea. By the afternoon, school attendance was reduced to 163 and several of the remaining students had to be sent home owing to sickness. The food consumed at the party consisted of bakers' confectionery from a single bakery and luncheon-meat sandwiches. Remnants of both types of food eaten were obtained.

Clinically, the outbreak was a severe one with diarrhea as the main symptom, many suffering from vomiting and complaining of headache and colic. Minor degrees of delirium in the children were not uncommon. Twenty-five children were sufficiently ill to be admitted to hospital, mainly because of dehydration. One child sent to hospital had anuria for 36 hours.

Some items of confectionery from the party had been taken home and the total number at risk was approximately 280. In all, there were 209 persons with positive fecal swabs. Fourteen persons who ate trifle from the party at home produced positive fecal specimens. The incubation period ranged from 8 to 78 hours with an average duration of 26 hours.

Investigation of the Outbreak. Investigation started at the bakery. Suspicion fell upon a trifle consisting of cake, crumbled by hand, set in jelly, and



topped with custard. The only item of the trifle containing egg was the cake. The trifles were sold in individual paper cartons and at least one trifle was allowed for each child. The jelly used was poured on to the cake crumbs at a high temperature.

Fecal swabs were taken from the bakery staff, and Moore's gauze swabs were inserted in the bakery sewers and in a drain receiving rinsings from the washing of bakehouse utensils. Fecal swabs were also taken from the staff in the grocer's shop which provided the luncheon meat.

**Results.** Salmonella typhimurium phage-type 2c and S. thompson phage-type 4 were isolated from the remnants of trifles eaten at the party. No salmonellae were cultured from the luncheon meat. S. typhimurium, phage-type 2c, was isolated from 4 of the bakery staff, 2 of whom had had symptoms, and from the two drain swab specimens. From fecal specimens of the patients, S. typhimurium was isolated from 117, S. thompson from 23, and both serotypes were isolated from 69. Representative cultures from these specimens showed the type of S. typhimurium to be 2c, and that of S. thompson to be type 4. These particular phage-types are common in egg products. S. typhimurium, phage-type 2c, has not hitherto been common, however, either in abattoir swabs or in human infections in the past 15 months in Glamorgan, and the only culture of S. thompson recently isolated from an abattoir swab belonged to phage-type 1. The girl in the bakery mainly concerned with the manufacture of trifles did not produce a positive stool for Salmonellae, although she was one of the staff giving a history of diarrhea before the outbreak. On the other hand, the girl in the grocery shop, who had handled the luncheon meat eaten at the party, produced a stool positive for S. typhimurium. Further stools from this girl were also positive.

**Discussion.** Although the isolation of one of the infecting organisms from the girl in the grocer's shop confuses the epidemiological picture, it is nevertheless true that the main concentration of infection lay in the bakery. Four bakery staff were excreting S. typhimurium; both bakery drain swab samples were positive for S. typhimurium; there was a double Salmonella infection in the trifle eaten; and the identical double infection occurred in many of the victims of the outbreak. Further, the phage-types of the infecting serotypes were common in egg products and uncommon in the local abattoir survey. The authors feel that the evidence points strongly to the bakery as the source of this outbreak.

The method of infection is in doubt. A laboratory experiment demonstrated that it was possible to isolate S. typhimurium from infected cake crumbs even after pouring jelly at a temperature near 100° C over them. It is noteworthy that some of the trifles prepared for the party were 30 hours old before they were eaten, thus allowing ample time for bacterial multiplication to occur. The work of Heller and Salter (1958) would make it unlikely that Salmonellae survived the baking process. Harvey and Phillips (1961) have indicated that various Salmonellae, depending on the serotypes contaminating some of the essential ingredients used by confectionery bakers, are so frequently found in bakeries that there is almost constant opportunity for infection of this type of product.

Type I Polioviruses in Flies

Department of the Air Force, Headquarters, United States Air Force, Washington 25, D. C. Studies of the Fate of Type I Polioviruses in Flies. United States Air Force Medical Service Digest, Vol. 12, No. 3, page 29, March 1961.

The common species of nonbiting flies have been, for a number of years, believed to be carriers of poliomyelitis. It has been determined that poliovirus fed to houseflies could be recovered from their carcasses 48 hours later. Reports show that flies caught in nature during epidemics of poliomyelitis harbored polioviruses; these findings have been confirmed in recent years. Flies have been shown to remain infective over a period of 2 to 3 weeks after ingestion of the virus. The findings reported supported the idea that flies act as mechanical carriers of polioviruses. The question of flies acting as a natural reservoir for viruses has not been recorded. The experiments described in this paper were designed to see whether the more sensitive tissue culture methods now available would give any further information on the behavior of polioviruses in common flies.

In the experiment, the flies were fixed to a swab stick and tissue culture containing the poliovirus was fed to the flies individually, taking care to avoid external contamination. Some flies were killed at the time of feeding and the initial virus intake was determined by titration of their carcasses. For maintenance the infected flies were fed individually 2 or 3 times a day. Fecal material was collected from the infected flies individually or as groups.

After ingestion, all fly carcasses tested were positive for 4 days. After ingestion of 10 to 50 plaque-forming units per fly, all carcasses tested within 11 days were positive; but none were positive on the 12th to the 17th day. The flies excreted the virus as long as their carcasses contained the virus. Hibernating flies kept at 5° C remained infected for 3 months with very little change in viral content during this time.

Virus titers in the feces reached peak values 3 hours after feeding. There was a drop in titer in both carcasses and feces in the 6th and 9th hour samples; then there was an increase in specimens collected 12 to 24 hours after feeding with a peak at the 18th hour. These results indicate that it is not possible to explain the high titer in fly carcasses simply by retention of the initial feeding.

The duration of infectivity showed that flies harbored the poliovirus at least 4 days and usually longer. Many remained infective through the second week, and all flies excreted virus as long as their carcasses contained the virus. Survival of poliovirus in hibernating flies for 3 months without a significant drop in titer showed that overwintering of polioviruses in hibernating flies is possible.

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### The Use of Oxygen Tents on Motorized Beds

There is ordinarily a very definite fire hazard in the use of motorized beds under an oxygen canopy if the canopy is of the type which covers the whole bed or if it covers the area under which the motor is installed. The oxygen leakage from the canopy in the normal operations will not be sufficient to subject the motor to any greatly enriched atmosphere, but it can occur when tucking the canopy around the edge of the bed. A channel is left which will put the motor directly in the way of a stream of oxygen at a concentration of about 50% which is quite sufficient to cause ignition of oil or lint with the spark of a centrifugal starter as a source of ignition.

It is recommended that the following common rule be adopted: When an oxygen tent is installed on a motorized bed, the bed should be raised to its high position and then the electrical cord of the motor should be disconnected from the electrical receptacle. Preferably, the electrical receptacle should be locked and remain so until the oxygen canopy is removed. (PrevMedDiv, BUMED)

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### Food Poisoning

H. Yamagata, Y. Iwafune, and Y. Shimamura. Detection of Clostridium welchii (Hobbs Type 6) from an Outbreak of Collective Food Poisoning. Japanese J Microbiol Vol. 3(4): 365-368, October 1959.

Food Poisoning. This is an account of an outbreak of food poisoning which occurred among 46 guests at a wedding party, of whom 11 were taken ill with severe abdominal pain and diarrhea 11-14 hours after the feast. A number of foods had been prepared for the occasion by 7 neighboring housewives and had been left in a room at a temperature of 30° C and a relative humidity of 80% for about 10 hours before they were eaten. Some of these dishes, 6 in number—red beans with rice, broiled mackerel, soup containing mackerel fillets, chicken, octopus and raw fish—were left over and examined bacteriologically. From each of the 2 mackerel dishes a strain of Clostridium welchii was isolated; no other pathogen was found. These 2 strains, designated Isami strain No. 1 and No. 2 were found on full bacteriological examination to be identical with Cl. welchii Hobbs type 6. Examinations of fecal material from 3 of the patients and the 7 housewives were negative. The way in which the mackerel became contaminated was not discovered. This is the first outbreak due to this type of Cl. welchii which, so far as the authors have been able to ascertain, has been reported in the Far East, including Japan.

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Doctors in the Armed Forces

Extract: M.M. Lewis. Supplement to Brit Med J, No. 5257:157, October 7, 1961.

A medical career in the Armed Forces offers considerable scope, both clinical and administrative, including as it does problems of tropical diseases, industrial health, emergency military surgery, epidemiology, and the entire range of public health work excluding geriatrics. Although the care of the sick and injured is an important part of the complex duties of the Forces doctor, it is by no means his chief duty. As far as the military efficiency and economy are concerned, the most successful doctor is he who has the least disease to treat and who keeps his men in the most efficient state of health. Let no one imagine that the maintenance of a military unit in a state of optimum physical and mental health is a matter of common and ready attainment devoid of professional interest. It demands a deep and special study not only of medical subjects but also of other applied sciences and a great deal of acquired experience both clinical and military. It also demands the ability to give medical advice to general and other officers commanding in a form readily translatable into executive action for the preservation of military efficiency, and a personality strong enough to persuade those in authority to heed the medical point of view.

To be successful in the Armed Forces, a doctor must study the special needs of the community he serves. This involves some knowledge and understanding of the functions and traditions of the Service, regiments, and various formations and of the duties which the personnel involved are required to perform. Only when he is reasonably conversant with these matters can a doctor claim to be a competent military medical officer.

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**RESERVE**



**SECTION**

Fiscal Year 1962  
Selection Boards

(continued from Vol. 39, No. 1)

Any officer eligible for consideration for promotion by any selection board has the right to forward through official channels a written communication inviting attention to any matter of record concerning himself which he deems important to his consideration. The communication must arrive at a



time not later than the convening of the selection board, and may not criticize or reflect upon the character, conduct, or motive of any officer. Communications should be addressed to president of appropriate selection board, Bureau of Naval Personnel, Washington 25, D. C., via the chain of command.

Naval Reserve officers of the grade of ensign in an active status are not required to undergo selection for promotion. Temporary appointments to the grade of lieutenant (junior grade) will be issued to such officers on completion of prescribed terms of service, currently 18 months, in an active status computed from date of rank in the grade of ensign.

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#### The Hump Problems in the Grades of Captain and Commander in the Naval Reserve

Continued promotion of large numbers of Naval Reserve officers, originally commissioned during World War II, to maintain promotion flow, has produced a hump in the senior grades in the Naval Reserve. A similar problem required attrition of regular Navy captains and commanders starting three years ago. However, until enactment of Public Law 86-559 (Omnibus Amendments to the Reserve Officer Personnel Act) in 1960 both attrition and promotion stagnation were avoided in the Naval Reserve by counting only permanent officers in grade. Under the revised statute, officers whose promotions are temporary as well as permanent count against the number in each grade who may be in an active status (Ready Reserve or Standby Reserve S-1). Authorized strength may not be exceeded except to meet mobilization requirements.

The legally authorized strength of Naval Reserve officers in an active status is 150,000. The Secretary of the Navy has directed that 120,000 may be line officers and 30,000 may be staff corps officers. The authorized strength of line captains and commanders is limited to 1.5 and 7% respectively of the total authorized number of line officers. This would limit the authorized strength to 1800 line captains and 8400 line commanders.

Mobilization requirements for senior Naval Reserve officers are more than met by the authorized strengths in the grades of captain and commander. This means, then, that the forced attrition of captains from active status which started last year will be necessary this year and for the next several years in order to continue to provide equitable selection opportunity to those coming into the zone for promotion to captain. This action will prevent the further aggravation of the hump problem that would occur if the number of captains in an active status were permitted to rise above its current legal limit. The same action may be necessary starting in fiscal year 1964 in the grade of commander.

The selection board convening in January 1962 to consider eligible Naval Reserve line captains for promotion to the grade of rear admiral will be reconvened as a continuation board to recommend the necessary number of captains for transfer from an active status. This board, with appropriate

staff corps membership, will also consider staff corps captains for proportional retention or transfer from an active status in order to provide a proper balance of military skills in the event of mobilization. Officers so transferred will be placed on the Inactive Status List and afforded the option of requesting transfer to the Retired Reserve. Those officers entitled to be credited with at least eighteen but less than twenty years of satisfactory Federal service at the time such transfer action is necessary, will be retained in an active status for a period sufficient to afford them the opportunity of completing their twenty years of service.

Officers considered for continuation last year will not be reconsidered. Each captain will be considered by a continuation board once. Officers in the area of consideration during Fiscal Year 1962 will be notified individually prior to the convening of the board, and later will be informed promptly of the board's recommendation. (From BUPERS Notice 1001 of 28 November 1961)

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Contingency Option Act  
Renamed and Modified

Planning on retirement during the next few years? It will pay you to look over recent changes to the Uniformed Services Contingency Option Act, now called the Retired Serviceman's Family Protection Plan.

Under this plan, you may elect to receive a reduced amount of retired pay in order to provide an annuity for eligible survivors after your death.

BUPERS Instruction 1750. 1C, which covers the Act, is currently under revision. However, NavAct 12 contains advance word on these changes:

If you have three years of service remaining before you retire with pay, you may now make an original election, a change, or a revocation under the plan. Reservists thus have until they reach age 57 to decide whether they wish to participate. If you have previously made an invalid election and now wish to take part in the new plan, you must submit a new election.

If your election is found void for any reason (except fraud or willful intent), it may be corrected at any time within 90 days after you are notified in writing that your election is void. The corrected election would be effective as of the date of the voided election.

If you retire with pay and make an election, the Secretary of the Navy may later permit you to withdraw for reasons of severe financial hardship when your participation would violate equity and good conscience. (The absence of an eligible beneficiary will not in itself be sufficient basis for withdrawal, however.)

If you make an election on or after 4 October 1961, later retire with a physical disability before you complete 18 years' service, and then die from a service-connected disability, your beneficiaries will not be eligible for the annuity if they are eligible to receive Dependency and Indemnity Compensation or Veterans' Administration Death Compensation. However, all



premiums you paid into this plan would be returned to your beneficiaries.

Under Option Three, you may provide for allocating a part of the annuity to (your) surviving children who are not children of your surviving, eligible spouse.

A change or revocation to any valid election which has been in existence for three years is effective if you retire on or after 4 October 1961.

If you have completed 18 years of service and did not make an election, you should reconsider the advantages of this plan as you may now be able to participate.

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### Drill Pay Status Directive Canceled

The directive providing for the removal from a pay status of some Naval Reserve officers on inactive duty who have completed 20 years of satisfactory federal service has been canceled.

District commandants have been requested to re-examine the on-board strength of units, and remove officers in the grade of lieutenant commander and above, who are in excess of allowance, from paid programs.

Existing waivers will remain in effect.

(From "The Naval Reservist" NAVPERS 15653 December 1961)

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POSTAGE AND FEES PAID  
NAVY DEPARTMENT

DEPARTMENT OF THE NAVY  
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